

Socio-demographic Correlates of Older Adults' Living Arrangements in Botswana

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Abstract

This study uses data from the 2011 Population and Housing Census (PHC) to examine the living arrangements of adults aged ≥ 65 years and to assess individual-level and household-level correlates of living alone for this age sector. Measures included age, sex, marital status, educational attainment, religion, employment status, occupation, economic activity, geographic locale, place of usual residence, housing and living conditions, disability status and relationship of respondent to household head. Overall, 12.6% of older persons lived alone. A higher percentage of this group resided in rural villages and settlements and they were more likely to be male, younger, and non-Christian, and to have attained tertiary education and be working. 6% of older adults who lived alone resided in very poor households and they fared worse economically than those in shared living arrangements. Their most common disabilities were vision (9.8%) and hearing (4.1%) impairments, with 22.2% of the former and 21.1% of the latter living alone. Policy and practice implications of study findings for Botswana's aging population are discussed in the paper.

Introduction

Population profiles have shifted dramatically worldwide during the past half century with lower rates of mortality and fertility shifting age structures upward. This demographic transition represents significant progress in terms of development but older populations bring new social and economic challenges such as increased prevalence of non-communicable diseases (NCD) and in some regions HIV and AIDS, and the widespread effects of globalisation and modernisation dynamics on individuals, families, communities and societies.

Population dynamics in Botswana, which we review in more detail below, clearly evidence the demographic transition that is underway. Also clear is the heavy toll of the HIV and AIDS epidemic in the country. But access to highly-active anti-retroviral medication, coupled with on-going improvements in other health, social and economic indicators, is expected to increase the percentage of the population aged ≥ 60 years to 7% by 2025-2030 –the United Nations standard for an 'older population'. Kinsella and He (2007) lay out the major challenges of aging populations world-wide and advocate for national and sector-wise policies that will address needs across various population subgroups.

Living arrangements are one of the most basic structures of social organisation, affecting the functioning and well-being of individuals, families, communities and societies. In traditional societies, co-residence is preferred, and older adults tend to live with, contribute to and be cared for by kin. In less developed countries two-generation and three-generation households remain the norm, and older people tend to choose to live with or close to their children for economic and cultural reasons (Kinsella and Phillips 2005; United Nations Department of Economic and Social Affairs (UNDESA) 2005). But modernisation and industrialising economies are experiencing rapid changes to these patterns, and are also eroding the social status of older people and longstanding protective and supportive functions of traditional family structures in many developing countries (Aboderin 2005). There are thus diminishing options for meaningful inclusion and participation of older adults in social and civic life especially in contexts with scarce resources.

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Intergenerational solidarity also appears to be waning in higher-income countries as multi-generational households give way to nuclear and alternative family forms, and growing numbers of older adults live alone by choice and by default. Cultural norms and social transfers of time, space and money are equally important in determining whether an older person lives alone or with family. Cross-national comparisons show substantial differences in the living arrangements of age groups in developed and developing regions. Older people, especially women, often live alone in developed countries, while living with kin is still the norm in the developing world (Stuart-Hamilton 2011). Key determinants of living arrangements of older adults include marital status, kin availability, personal wealth, health and individual preferences, while effects include life satisfaction, health, mental health, social integration and, when it is an option, the chances of institutionalisation. It remains to be seen how external forces and internal dynamics will affect the living arrangements of older adults in Botswana. As a society-wide phenomenon that crosses generations and social sectors it is important to track trends and establish correlates of living arrangements in order to inform the development of fair and adequate social and economic policies and best practices.

Much has been written about the social and economic forces that have produced the ageing of populations and the short-term and long-term implications of this demographic trend. Specific patterns vary by context but the overall trend stems from sharp modernisation-related declines in fertility since 1970, and reduced mortality since 1950. More recently, internal and out-migration have also become important factors. The populations of sub-Saharan Africa are comparatively young but like other developing countries they are ageing far more rapidly than those of developing countries that are further along in their demographic transitions (United Nations 2013). The number of persons aged ≥ 50 years in sub-Saharan Africa is expected to quadruple from 40 million starting 2010 to nearly 160 million by 2050. In Botswana this age sector is projected to triple from 223,000 (11.3%) to 677,000 (24.3%) during this time interval (United Nations 2013).

Demographic factors related to fertility, mortality and migration in Botswana are key indicators of social and economic development. These measures can be helpful in assessing the impact of modernisation on family structure and household composition as they are associated with a tendency for older couples and individuals to live apart from their children and other relatives (United Nations 2005).

In Botswana net migration roughly doubled between the early 1970s and the early 1990s but the percentage is small and is expected to return to 1970s level in the coming decade. Far more staggering due to economic development is the percentage of people living in urban areas which has increased from 16.7% in 1970 to 61.2% in 2010, and is projected to be 72.7% by 2030 (Statistics Botswana 2014 and Apt 2000). There are also dramatic reductions in fertility and steady increases in the older population. The effects of the HIV and AIDS epidemic are seen in life expectancy at birth and crude death rates, both of which have now begun to rebound to pre-epidemic levels. Also noteworthy is the fact that older Botswana tend to live with close relatives other than their spouses and children.

Rapid and concentrated changes in the age structure, and increased urbanity in Botswana occurred before social and economic conditions permitted the secure transfer of wealth towards older adults to emerge and develop or consolidate. As a result, Palloni (2002) argues that institutional contexts tend to be characterised by insufficiently developed capital markets, high risk and uncertainty that inhibit private savings, insecure property rights, high inflation and inadequate or non-existent social security schemes, private pension plans and health insurance. Older Botswana have fared better than most of their contemporaries in sub-Saharan Africa in terms of social security pensions and social protection measures. However, many do not know about or are unable to access these schemes while others die before they are eligible. This is due in part to the longstanding tradition of intergenerational households that provide an economic safety net and meaningful roles that help sustain the health, mental health and

social well-being of older family members (Bainame and Shaibu 2003).

In addition to explaining changes in a society's age structure, population dynamics contribute to living arrangements and household structures. Living arrangements are influenced by factors such as marital status, financial resources, health status, family size and structure, and cultural traditions such as kinship patterns, the value placed on living independently or with family, the availability of social services and social support, and the physical features of housing stock and local communities (Verloff 2001). Living arrangements in turn affect quality of life, life satisfaction, health and functional status, social support and mental health.

The rapid succession of large extended families in rural areas by nuclear families in urban enclaves raises serious concerns about the welfare of older people (Apt 1997; Bongaarts and Zimmer 2002; Cheng and Siankam 2009). Norms of reciprocity and interdependence characterise co-resident households, and the bi-directional flow of resources and supports change in response to individual needs and capacities (Ruggles and Heggeness 2008). Co-resident older adults contribute, for example, through employment, childcare and household work. Many preserve their families by caring for grandchildren and other young kin affected by HIV and AIDS. Examining the living arrangements of older adults will thus also help illuminate the status of other generations in Botswana families and changing intergenerational family dynamics.

For consistency with other studies we use United Nations (2005) schema to assess the living arrangements of older adults and the risks and benefits associated with household configuration. The format involves five mutually exclusive categories of living: 1) alone; 2) spouse only; 3) child (including adopted children), child-in-law or grandchild; 4) another relative (other than a spouse or child/grandchild); and 5) unrelated people only apart from a spouse. Those persons who live with a child/grandchild may also be living with other relatives or non-relatives, and those who live with other relatives may also have non-kin in the household. The category of living with a child or grandchild is further broken down into multi-generation and skipped-generation households. This bifurcation is based on family relationships of household members, not household headship, the meaning of which varies culturally. It also ignores the marital status of adult children, which is salient in some contexts, but in terms of the ability of adult children to support their parents, characteristics such as children's age and health status are likely more important (United Nations 2011). The point is that the risks and benefits for older adults' well-being vary greatly depending on their living arrangements.

The percentage of older people who live alone is the most widely available statistic on living arrangements of older adults owing to how data on household composition are tabulated. As Zimmer and Das (2013) point out, linking household composition of older persons and material well-being is an important step toward understanding older adults' quality of life in less developed settings especially sub-Saharan Africa where poverty rates are high. Furthermore, single-dwelling older people who are ill or disabled are more likely to need assistance but they tend to have smaller social networks, higher risk of isolation, loneliness, depression and anxiety, and high rates of poverty (especially women) (Casey and Yamada 2002; Hermalin 1997; Mui and Burnette 1994 and Zimmer 2009). The Botswana 2001 PHC showed that 14.5% of older adults lived alone of whom 36% were disabled (Bainame and Shaibu 2003). This group is of great concern to health and social policy makers especially since there are but a few day care centres in select villages and no old age homes in the country (Shaibu and Wallhagen 2002).

UNDESA (2011) reports that on average three quarters of persons aged ≥ 60 years in less developed societies live with children and/or grandchildren, compared with about a quarter of the older population in more developed societies. A prime example of the downward flow of intergenerational support is the growth in households in which older adults are raising grandchildren and orphans and vulnerable children due to HIV and AIDS. In sub-Saharan Africa an estimated 13.5% of persons aged

≥ 60 years are heads of households (Cheng and Siankam 2009; Hosegood and Timeaus 2005; Kautz, Bendavid, Bhattacharya and Miller 2010).

In Botswana 42.5% of orphan caregiving households are headed by grandmothers (Republic of Botswana 2008). Grandparents are the sole caregivers for at least half of all OVC, and their numbers are expected to double between 2008 and 2015 (Help Age 2008). Raising young kin can have significant personal and societal benefits but gains are too often countered by social, health and mental health problems, disrupted family and social relationships and financial insecurity, especially in resource-limited settings where many grandparent carers are extremely poor (Help Age International 2003 and UNDESA 2004) and are likely to experience premature morbidity (Clausen, Wilson, Molebatsi and Holmbow-Ottensen 2007).

One in four people in Botswana are now living with HIV and AIDS and the epidemic has left 93,000 children (12%) orphaned. New infections are declining but owing to a time lag between parent infection and death, adult deaths from AIDS will continue to raise the number of affected orphans in the next decade. Even with improved effectiveness, ease of administration and access to treatment, the number of HIV and AIDS affected OVC will thus remain exceedingly high (AVERT 2013).

There is also need for attention to the quality of the environment. Housing and community amenities that help older persons live comfortably and stay active and engaged in society include dwellings that can accommodate persons with limited mobility and strength, a clean and safe environment inside and outside the home, transportation that is affordable and accessible, walkways in urban areas that are in good repair and free of obstacles, traffic signals that allow time for older persons to cross streets safely, places to rest outdoors, and public buildings that are accessible to those with limited mobility (World Health Organisation 2007).

In sum, there is growing evidence that economic development, rural-to-urban migration and changing norms about families and households are weakening the traditional support systems for older adults (Mokomane 2013). Along with high mortality rates for working-age adults due to HIV and AIDS these social forces have disrupted demographic trends that favour social security and economic development. Given the inevitable competition for scarce resources there is a need to go beyond descriptions of household composition and characteristics to determine what factors influence the living arrangements of older adults and contribute to increased risks of poor economic, social, health, and mental health outcomes (McKinnon and Moore 2013). It is also important to assess trends in living arrangements and environmental change. Residential situations appear stable in aggregate but panel studies show that for many older adults these conditions shift within a few years due to changes in health and economic status (UNDEAS 2011). This study addresses these questions.

Data, Measures and Methods

The analysis in this paper is based on 95947 older adults 65 years and above enumerated in the 2011 PHC. These data are hierarchical in nature with records for households and individuals in households. The data on housing and living conditions of the households were merged with individual household member data. The individual member records captured information on relationship to head of household, sex, age, place of residence, religion, disability (types and causes), education (school attendance, educational attainment), economic activity, employment status, marital status, and household records captured information on housing and living conditions. The data on the relationship to the head of the household were aggregated to construct profiles of living arrangements for older adults, for those living alone, with a spouse, with children, close relatives, other relatives and those not related. A household wealth construct was also derived from a cumulative of household characteristics and consumables. These together with the individual household member characteristics are principal in fitting the model in this paper.

The analysis employs binary logistic regression that predicts older adults living alone, the odds that they are aged 65-69 years or never attended school or wealthy, and are neither Christians nor reside in cities and towns or female and ever married, relative to living with other family members.

Results

Living arrangements and socio-economic characteristics of older adults

As seen in Table 1 below, 12.6% of older persons lived alone, 37.% lived with their spouse, 50.4% lived with their children, and 53.8% lived with other close relatives. These distributions vary by residence, sex and age. A higher percentage of older persons who live alone reside in rural villages and settlements (15.7%) than in urban villages (8.9%) and cities and towns (11.2 %) while more of those who live with a spouse (43.1%) reside in cities and towns, as compared to 38.4 % in rural villages and settlements, and 34.4% in urban villages.

A higher percentage of older adults who live with their children (57.7%) and other close relatives (57.4 %) reside in urban villages while those living with other relatives (15.8 %) and non-relatives (8.5%) are in cities and towns. Males (17.4%) are more likely than females (9.3%) to live alone, while women are more likely than men to live with children (54.5% vs 44.4%) and close relatives (59.6% vs 45.5%).

Table 1: Percentage Distribution of Living arrangements by residence, sex and age group

Residence	Living Arrangement												Total N
	Alone		With spouse		With children		With close relatives		With other relatives		With non-relatives		
	N	%	N	%	N	%	N	%	N	%	N	%	
Cities and towns	723	11.2	2783	43.1	3478	53.9	3602	55.8	1021	15.8	549	8.5	6455
Urban villages	3304	8.9	12799	34.4	21462	57.7	21343	57.4	5153	13.9	2765	7.4	37205
Rural village/ settlements	7577	15.7	18507	38.4	21301	44.2	24454	50.8	5990	12.4	3808	7.9	48145
Total	11604	12.6	34089	37.1	46241	50.4	49399	53.8	12164	13.2	7122	7.8	91805
Sex													
Female	5056	9.3	12812	23.7	29523	54.5	32273	59.6	7679	14.2	3979	7.3	54167
Male	6548	17.4	21277	56.5	16718	44.4	17126	45.5	4485	11.9	3143	8.4	37638
Total	11604	12.6	34089	37.1	46241	50.4	49399	53.8	12164	13.2	7122	7.8	91805
Age group													
65 - 69	3500	13.2	10973	41.3	13467	50.7	13659	51.4	3313	12.5	2164	8.1	26578
70 - 74	2870	13.4	8383	39.2	10844	50.7	11233	52.5	2691	12.6	1653	7.7	21383
75 - 79	2118	12.3	6187	36.1	8737	50.9	9345	54.5	2196	12.8	1278	7.4	17158
80 - 84	1583	12.5	4265	33.7	6211	49.1	7002	55.4	1734	13.7	931	7.4	12644
85 - 89	911	11.7	2387	30.6	3895	49.9	4481	57.4	1189	15.2	614	7.9	7811
90 - 94	396	10.7	1161	31.3	1861	50.2	2149	57.9	587	15.8	251	6.8	3710
95+	226	9.0	733	29.1	1226	48.6	1530	60.7	454	18	231	9.2	2521
Total	11604	12.6	34089	37.1	46241	50.4	49399	53.8	12164	13.2	7122	7.8	91805

Source: Statistics Botswana (2011)

Tables 2, 3 and 4 present data on the living arrangements of older adults in terms of their background characteristics. As we see in Table 2 older persons who live alone generally either never married or are divorced. Many of the latter were living with children or other close relatives. Increased educational levels were associated with a tendency to live alone. A slightly higher percentage of older adults living alone were non-Christians (15.7%) as compared with 13.6% with no stated religion and 12.1% of Christians. Just over one-third of Christians lived with a spouse (35.8%), as did 41.4% of non-Christians and 41.3% of persons with no religion. A higher percentage of older adults living with children and those living with close relatives were Christian.

Table 2: Percentage Distribution of Living Arrangements by Marital Status, Educational Attainment and Religious Affiliation

	Living arrangements												Total N
	Alone		With spouse		With children		With close relatives		With other relatives		With non-relatives		
Marital status	N	%	N	%	N	%	N	%	N	%	N	%	N
Married	3369	9.2	24247	65.9	18627	50.6	18784	51.1	3819	10.4	2722	7.4	36785
Never Married	2729	17.8	1440	9.4	7375	48.0	8412	54.8	2864	18.6	1298	8.5	15360
Living together	562	7.0	5938	73.8	3494	43.4	3724	46.3	1084	13.5	705	8.8	8044
Separated	326	35.9	51	5.6	302	33.3	413	45.5	107	11.8	66	7.3	908
Divorced	681	30.8	153	6.9	883	40.0	1051	47.6	302	13.7	192	8.7	2209
Widowed	3936	13.8	2258	7.9	15555	54.6	17014	59.7	3987	14.0	2139	7.5	28492
Total	11603	12.6	34087	37.1	46236	50.4	49398	53.8	12163	13.2	7122	7.8	91798
Educational attainment													
Never attended	41	10.8	123	32.4	186	48.9	207	54.5	60	15.8	39	10.3	380
Non-formal	170	10.8	535	34.1	851	54.2	856	54.5	189	12	147	9.4	1570
Primary	3675	11.9	10414	33.7	16332	52.8	17432	56.4	3644	11.8	2221	7.2	30935
Secondary	479	14.8	1431	44.1	1513	46.6	1597	49.2	402	12.4	335	10.3	3247
Tertiary	486	15.4	1560	49.4	1421	45	1391	44	357	11.3	344	10.9	3161
Total	4851	12.3	14063	35.8	20303	51.7	21483	54.7	4652	11.8	3086	7.9	39293
Religious affiliation													
No religion	1800	13.6	5483	41.3	6302	47.5	6798	51.3	1929	14.5	1079	8.1	13262
Non-Christians	1357	15.7	3585	41.4	4017	46.4	4301	49.7	1144	13.2	664	7.7	8651
Christians	8405	12.1	24940	35.8	35824	51.4	38197	54.8	9059	13	5359	7.7	69675
Total	11562	12.6	34008	37.1	46143	50.4	49296	53.8	12132	13.2	7102	7.8	91588

Source: Statistics Botswana (2011)

Table 3 presents data on older adults' main economic activity in the last 12 months and type of work for pay in the past 7 days. Among those older adults living alone about 11% sought a job in the 12 months

preceding the census, as did 36.5% of those living as a couple, 51.1% of those living with children, 51.6% of those living with close relatives, and 16.6% of those living with other relatives. With regard to economic activity 8.7% of older adults living with non-relatives worked for pay, profit or home use while 10.7% living with distant relatives, 20.4% living alone, 41.6% living with children, 43.8% living with close relatives and 44.8% living as a couple worked for at least one hour in past 7 days for pay, profit or home use.

Table 3: Percentage Distribution of Living Arrangements by Economic Activity

	Living arrangements												
	Alone		With spouse		With children		With close relatives		With other relatives		With non-relatives		Total
E c o - n o m i c Activity	N	%	N	%	N	%	N	%	N	%	N	%	N
Seasonal – Paid	462	13.3	1493	42.8	1636	46.9	1793	51.4	436	12.5	325	9.3	3485
Seasonal – Unpaid	1231	11.9	4613	44.4	5285	50.9	5358	51.6	1175	11.3	783	7.5	10388
Non-seasonal – Paid	1531	20.3	3483	46.2	3156	41.9	3078	40.9	868	11.5	756	10	7531
Non-seasonal – Unpaid	1729	24.0	3056	42.4	2706	37.6	3064	42.5	700	9.7	569	7.9	7205
Job seeker	108	11.1	354	36.5	496	51.1	501	51.6	163	16.8	93	9.6	970
Home maker	3345	10.3	10343	31.7	17351	53.2	18708	57.4	4326	13.3	2287	7	32600
Student	26	11.2	70	30.2	127	54.7	119	51.3	48	20.7	32	13.8	232
Retired	1262	11.7	4976	46.2	5604	52	5871	54.5	1462	13.6	935	8.7	10769
Sick	1902	10.3	5662	30.5	9825	53	10862	58.6	2976	16.1	1335	7.2	18536
Prisoners	8	9.8	37	45.1	51	62.2	43	52.4	7	8.5	5	6.1	82
Other (NEC)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	11604	12.6	34087	37.1	46237	50.4	49397	53.8	12161	13.2	7120	7.8	91798
E m - p l o y - m e n t													
Not working	7275	10.3	24567	34.8	37409	53	40097	56.8	9888	14	5278	7.5	70549
Working	4329	20.4	9522	44.8	8832	41.6	9302	43.8	2276	10.7	1844	8.7	21256
Total	11604	12.6	34089	37.1	46241	50.4	49399	53.8	12164	13.2	7122	7.8	91805

Source: Statistics Botswana (2011)

Household living arrangements and older persons living with disability

As seen in Table 4 the two most common types of disability were being partially sighted (9.8%) and partially hearing (4.1%). Among the 8,981 older persons who were partially sighted 22.0% lived alone, 30.7% lived with a spouse, 39.8% lived with children, 48.6% lived with close relatives, 11.0%

lived with other relatives, and 6.0% lived with non-relatives. Of the 3,775 older persons with hearing difficulties 21.1% lived alone, 29.0% with spouse, 41.5% with children, 50.2% with close relatives, 16.8% with other relatives and 5.8% with non-relatives. Finally, a small percentage (0.6%) of older persons reported to be suffering from a mental disorder, and most of these individuals lived with close relatives.

Table 4: Percentage Distribution of Living Arrangements by Type of Disability

Living Arrangements								
Disability	Alone	W i t h spouse	W i t h children	With close relatives	With other relatives	W i t h non-relatives	Total	
Partially sighted	22.0	30.7	39.8	48.6	11.0	6.0	8 981	9.8
Total blindness	6.2	37.9	55.2	59.7	19.4	8.0	2 251	2.5
Partial hearing	21.1	29.0	41.5	50.2	11.8	5.8	3 775	4.1
Deafness	12.4	34.0	47.4	55.6	16.8	7.5	477	0.5
Partial speech impediment	16.0	33.5	49.4	60.2	13.0	8.2	269	0.3
Inability to use 1 leg	20.5	32.7	41.9	49.8	11.6	5.9	1 402	1.5
Inability to use 1 arm	20.2	34.5	43.3	47.7	11.8	8.7	771	0.8
Inability to use the whole body	12.0	34.9	50.0	56.0	17.9	9.2	498	0.5
Intellectual impairment	21.1	24.8	37.6	52.6	24.8	9.0	133	0.1
Mental health disorder	8.0	28.2	52.3	59.5	21.9	9.4	511	0.6
Missing 1 arm	19.4	32.3	45.2	41.9	9.7	3.2	31	0.0
Missing 1 leg	10.9	44.5	51.8	54.5	13.6	8.2	110	0.1
Total								91807

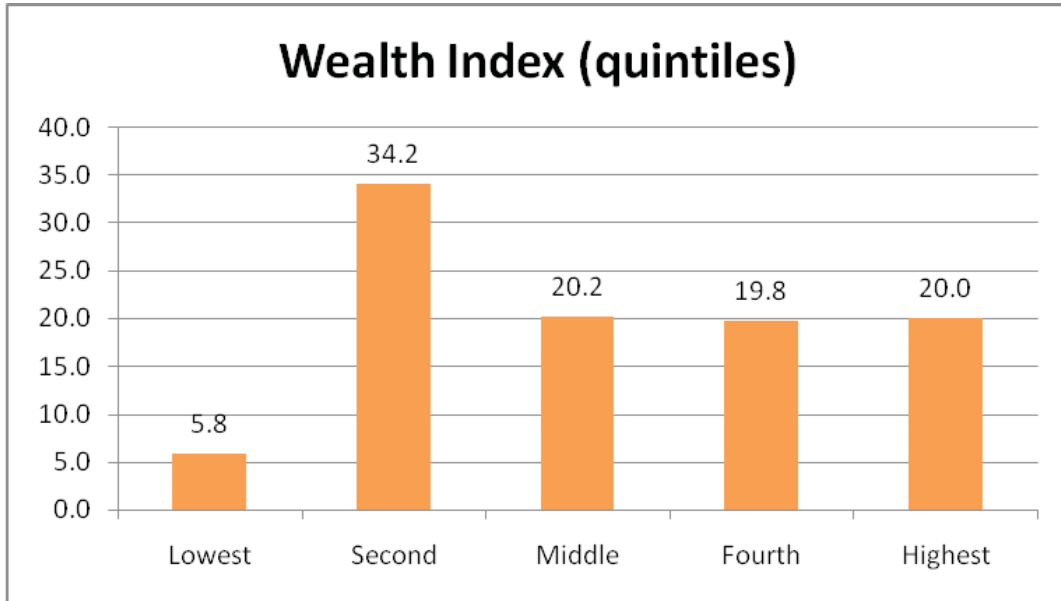
Source: Statistics Botswana (2011)

Wealth Index (Quintiles) for households with adults aged 65 years and older

The 2011 PHC questionnaire wealth index is a composite measure of household cumulative living standard. The index is based on ownership of consumables such as a television and car, dwelling characteristics such as flooring material, type of drinking water source, toilet facilities and other relevant amenities. Each asset is assigned a weight or factor score generated through principal components analysis. These scores are standardised with a mean of zero and a standard deviation of one then used to create quintile break points (Rutstein and Johnson, 2004).

As seen in Figure 1 below, 5.8% of older adults lived in the poorest households, 34.2% were in second poorest quintile, and 20.0% were in the richest households.

Figure 1: Wealth Index for Older Adults



Source: Statistics Botswana (2011)

Table 5 presents data on variations in wealth status by background characteristics and living arrangements. Older adults living alone fared poorly on the wealth index against their peers in other living arrangements. 15.2% of those living alone were in lowest quintile households, compared to 8.3% of those living with a spouse, 5.8% of those living with children and 4.0% of those living with other relatives.

Table 5: Percentage Distribution of Living Arrangements and Socio-demographic Characteristics by Wealth Index (Quintiles) for Older Adults

Living arrangement	Wealth Index(quintiles)										
	Lowest		Second		Middle		Fourth		Highest		Total
	N	%	N	%	N	%	N	%	N	%	N
Alone	1778	15.3	1213	10.5	4197	36.2	2589	22.3	1827	15.7	11604
With spouse	416	8.3	2243	44.7	864	17.2	596	11.9	900	17.9	5019
With children	407	5.8	1486	21.2	1631	23.2	1563	22.3	1937	27.6	7024
With close relatives	720	5.6	4586	36.0	2430	19.1	2343	18.4	2666	20.9	12745
With other relatives	262	4.0	3325	50.5	912	13.9	941	14.3	1140	17.3	6580
With non-relatives	67	5.4	429	34.7	268	21.7	235	19.0	237	19.2	1236
Total	3479	8.6	12058	29.9	9577	23.7	7478	18.5	7738	19.2	40330
Age group											
65 – 69	1403	5.1	8897	32.3	5208	18.9	5480	19.9	6551	23.8	27539
70 – 74	1278	5.8	6967	31.5	4653	21.0	4484	20.2	4764	21.5	22146
75 – 79	1042	5.8	5694	31.9	3648	20.5	3734	20.9	3707	20.8	17825
80 – 84	868	6.6	4520	34.3	2855	21.7	2640	20.0	2290	17.4	13173
85 – 89	540	6.6	3211	39.1	1721	21.0	1581	19.2	1161	14.1	8214
90 – 94	238	6.1	1837	47.0	725	18.6	651	16.7	455	11.6	3906
95+	186	7.0	1505	56.8	458	17.3	307	11.6	195	7.4	2651
Total	5555	5.8	32631	34.2	19268	20.2	18877	19.8	19123	20.0	95454
Place of residence											
Cities/ Towns	11	.2	2617	39.4	391	5.9	1084	16.3	2542	38.3	6645
Urban villages	482	1.2	12205	31.3	5242	13.5	8891	22.8	12148	31.2	38968
Rural villages/ Settlements	5062	10.2	17809	35.7	13635	27.4	8902	17.9	4433	8.9	49841
Total	5555	5.8	32631	34.2	19268	20.2	18877	19.8	19123	20.0	95454
Sex											
Female	2862	5.0	21849	38.2	10715	18.7	10980	19.2	10749	18.8	57155
Male	2693	7.0	10782	28.2	8553	22.3	7897	20.6	8374	21.9	38299
Total	5555	5.8	32631	34.2	19268	20.2	18877	19.8	19123	20.0	95454
Educational attainment											
Never attended	7	1.8	152	38.4	65	16.4	78	19.7	94	23.7	396
Non-formal	35	2.1	506	30.9	339	20.7	426	26.0	333	20.3	1639
Primary	457	1.4	9387	29.3	5160	16.1	7795	24.4	9203	28.8	32002
Secondary	16	.5	1145	34.6	221	6.7	446	13.5	1484	44.8	3312
Tertiary	1	.0	839	26.3	67	2.1	200	6.3	2089	65.4	3196
Total	516	1.3	12029	29.7	5852	14.4	8945	22.1	13203	32.6	40545

Source: Statistics Botswana (2011)

With the exception of the 65-69 age group, the percentage of older adults in the second quintile of the wealth index tended to increase with age, with 35.5% of those in the 70-74 age group in this quintile vs 58.8% of those aged 95 years and over. Likewise, the percentage of older adults in the richest households decreased with advancing age with 23.8% of persons aged 65-69 in the highest quintile and 7.4% of those aged 95 years and over. One in ten older adults in rural villages and settlements were living in the poorest households compared with less than one percent of their age peers in cities and towns.

Older males fared better but not much better than females with 7.0% of the former in the lowest wealth quintile (21.9% in second-highest quintile) compared with 5.0% of females (18.8% in second-highest quintile). Finally, older adults with non-formal education (2.1%) were in the poorest households and 20.3% of these groups were in the highest quintile, as compared to 23.7% who never attended school and 28.8% with primary, 44.8% with secondary and 65.4 % with tertiary education.

Multivariate Analysis: Demographic and SES Correlates of Living Alone

Multivariate logistic regressions were performed to identify correlates of older adults' living alone. As seen in Table 6 below, demographic and SES variables accounted for 16.2% of the variance in living arrangements. The odds ratios represented control for confounders. With the exception of the 65-69 age group, older adults aged 95 years and over were less likely than other age groups to live alone. Older adults who never attended school, those with non-formal education and those at primary level were less likely than counterparts with tertiary education to live alone.

Table 6: Logistic Regression of Demographic and SES Factors on Living Arrangements

Variable	Odds Ratio	Sig
Age group		
65 – 69	.990	.953
70 – 74	1.094	.604
75 – 79	1.077	.669
80 – 84	1.217	.265
85 – 89	1.147	.449
90 – 94	1.029	.889
95+		
Educational attainment		
Never attended	.480	.000
Non-formal	.427	.000
Primary	.531	.000
Secondary	.884	.097
Tertiary		
Wealth Index(quintiles)		
Lowest	5.759	.000
Second	.202	.000
Middle	2.704	.000
Fourth	1.696	.000

Highest		
Religious affiliation		
No religion	.934	.244
Non-Christians	1.024	.727
Christians		
Place of residence		
Cities and Towns	.884	.030
Urban villages	.679	.000
Rural villages and settle- ments		
Sex		
Female	.566	.000
Male		
Marital status		
Ever married	.504	.000
Never married		

Source: Statistics Botswana (2011)

Older adults in cities and towns and those in urban villages were less likely to live alone than their counterparts in rural villages and settlements ($p < .05$). Females and those who were ever married were 44.4% and 49.6% less likely to live alone than males and the never married respectively. Household wealth was important to living arrangements, with the poorest group being 5.8 times more likely to live alone than the richest group. Conversely, older adults in the second lowest wealth quintile were 79.8% less likely to live alone than the wealthiest older adults ($p < .05$).

Recommendation

The data suggest the following implications for policy and practice:

- In age-disaggregated data, older people lived with close relatives rather than with spouses and children. Additional research is needed to understand the family dynamics that lead to this extended family scenario.
- Older adults in cities and town, and urban villages were less likely to live alone than their counterparts in rural villages and settlements as more people in Botswana now reside in urban areas. Perhaps, the increasing rural to urban migration may explain this trend. A more detailed situational analysis of older people’s living arrangements should be carried out as the variables that were used in the analysis could only explain 16.2% of the variations in living arrangements. This would yield important information that could be used to inform the planned ageing policy.
- Interestingly, a higher percentage of men than women lived alone, a new trend compared to the last population census where more women than men lived alone.
- Although older people lived with their children and other relatives, there needs to be a study on intergenerational transfers as co-residence does not necessarily imply that the older people were being taken care of. The number of people who were still working in their old age is worrisome, and government may have to review the old age pension and increase the retirement age for public service. Even the older people who were living with their children were still seeking employment even at advanced ages. Older people in Botswana receive a non-contributory old

age pension equivalent to (230 Botswana Pula = US\$ 26.)

- Older people are likely to continue to be more vulnerable as the fertility levels decline and old age dependency ratio rises as many depend on family support.
- Two types of common disabilities were identified among older people, namely poor sight and hearing. Oftentimes older people have poor sight that is caused by undiagnosed cataracts due to diabetes mellitus, and they could easily be extracted to improve sight. Some of the hearing disorders could be easily improved with the use of hearing aids. Screening programmes targeting older people need to be put in place to improve the quality of life of ageing populations in Botswana. Although more people with partial sight were living with other people, 22% of older people with partial sight were living alone, and this compromises their quality of life. Government and civil society needs to raise awareness and increase screening for NCDs that accompany ageing such as diabetes mellitus, cancer and hypertension among others, as the life expectancy of older people has increased.
- The increase in the rising prevalence of NCDs among people living with HIV (PLWH) in Botswana is also worrisome (Reid, Tsima and Kirk 2012). Many people have aged with HIV due to a successful ARV programme and response to HIV, therefore diabetes mellitus is more likely to develop among older people. The current National Health Policy has several policy thrusts that include health promotion (Republic of Botswana, 2012), and these should be extended to the older people as well.
- There were older people who were reported sick including those who were living with persons they were not related to, those living alone, and those who lived with family members. The home based care (HBC) program should be strengthened so that it can provide outreach services to the sick older people. Currently the patients on HBC are older people with mostly NCDs like stroke, cancer and hypertension.
- A few day care centres have been formed by civil society in response to the plight of older people. More day care centres should be opened by both civil society and government to improve the quality of their lives. Multidisciplinary programmes could be offered at such facilities.
- It is also important that we train interdisciplinary professions (social workers, doctors, nurses, pharmacists, lawyers etc) for the longevity revolution to enable them to have knowledge pertinent to ageing issues.
- A policy framework for active ageing as recommended by WHO is necessary to guide a plan of action for healthy ageing. This should incorporate the four pillars of health, lifelong learning, participation and protection (WHO 2002).

Conclusion

This paper described and examined socio-demographic and economic correlates of the living arrangements of older adults in the 2011 PHC. Older people lived in urban areas with close relatives rather than with their children and spouses. A higher percentage of older adults who lived alone resided in rural areas. Those who lived alone fared poorly on the wealth index compared to their peers in other living arrangements. Most older people worked for pay, profit, or home use irrespective of whether they were living alone, with children, close relatives or as a couple. Poor sight and hearing were identified as common disabilities. These observations are an indication to civil society and government that there is need to address declining social support for older people and the effects on their health and quality of life in general. It is also implicit in these that the traditional family and social support systems are giving in to new systems. This will necessitate a realignment of Botswana's approach to issues of ageing and that can be guided by policy on ageing that seek to address these emerging issues on ageing in Botswana.

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